SET Environmental, Inc.
450 Sumac Road
Wheeling, IL 60090
Phone: 847/537-9221 Fax: 847/537-9265

In partnership with
ENGINEX
ENVIRONMENTAL ENGINEERING

SOIL EXCAVATION AND MONITORING REPORT
COMED UTILITY VAULT
400 EAST ONTARIO STREET
CHICAGO, ILLINOIS

December 5, 2008

Enginex Project Number: 8116

Prepared For:
ComEd-ESD
Three Lincoln Center
Oakbrook Terrace, IL 60181

Prepared By:
Enginex Environmental Engineering
27834 North Irma Lee Circle
Lake Forest, IL 60045

SET Environmental, Inc

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1.0 INTRODUCTION

Enginex Environmental Engineering (Enginex) was retained to monitor radiation levels during the concrete removal activities at 400 East Ontario Street for Commonwealth Edison (ComEd). The purpose of the work was to perform repairs and maintenance to a ComEd vault box located beneath the sidewalk at the northeastern corner of the intersection of Ontario Street and McClurg Street. The work was being conducted by Meade Electric (Meade). A Site Location Map and a 2002 Aerial Photograph of the location have been provided as Figures 1 and 2, respectively.

The work site is in the Streeterville area, which has previously been identified by the United States Environmental Protection Agency (USEPA) and the Chicago Department of Environment (CDE) as potentially contaminated with thorium. The potential impacts resulted from historical operations at the former Lindsey Light and Chemical Company. The issuance of a City of Chicago right-of-way (ROW) permit for excavation in this area requires that radiation monitoring be conducted. The USEPA and CDE has provided guidance for conducting radiation monitoring and implementing appropriate health and safety procedures for working in areas where higher levels of radiation may be present.

The following activities were performed prior to beginning the site work:

- ComEd obtained a ROW permit from the City of Chicago to perform the activities. A copy of the permit is included as Appendix A.
- Enginex prepared the "400 East Ontario - General Procedures for Thorium Monitoring" document which describes the radiation monitoring and concrete disposal protocol that was followed during the site work. This document was forwarded to the USEPA prior to beginning the monitoring activities. A copy of the document has been included as Appendix B.

2.0 DAILY FIELD ACTIVITIES

The work scope involved the replacement of the roof on a ComEd vault box beneath the sidewalk at the northeast corner of Ontario Street and McClurg Street. Radiation monitoring activities were conducted on November 13 and 14, 2008. The City of Chicago Right-of-Way

(ROW) permit allowed work to be conducted 24 hours a day between October 15, 2008 and November 21, 2008.

The dimensions of the initial surface removal down to the top of the vault roof was approximately 30 feet (ft) long from east to west and 20 ft wide from north to south. The City of Chicago required modifications to the sidewalk and roadway as part of the work being conducted by Meade to meet current building code requirements. In order to meet these requirements for the sidewalk, the surface removal was extended an additional 5 ft outward into McClurg Street and Ontario Street along the western and southern borders of the vault, respectively. An extra 15 ft long by 9 ft wide portion of the sidewalk was removed along the eastern border of the vault. The surface removal depth was approximately 18 inches below ground surface (in bgs), which corresponded to the thickness of the concrete. Only the surface of the native soil beneath the concrete was exposed throughout the removal area (i.e., no soil was removed). The location of the work area is depicted in Figure 2. A sketch of the work area is included in SACHI's Thorium Monitoring Report in Appendix C.

The work required total lane closures of the far right lanes of both Ontario and McClurg Streets. Traffic control, consisting of a combination of barricades, cones, and road signs, was set up by Meade. The operating equipment used by Meade was stored within the barricaded work zone during non-working hours. A safety meeting, STAR meeting, and job analysis were conducted by SET Environmental, Inc. (SET) and Meade personnel prior to beginning each work day. Site photographs depicting the site conditions and removal activities are included in Appendix D.

A portion of the work that included the exposure and repairs to the vault box had already been completed by Meade prior to the initiation of radiation monitoring on November 13, 2008. ComEd did not arrange for radiation monitoring at the start of the vault repair work, since no soil removal was going to occur. The USEPA made an inquiry to ComEd about the site work, so a conference call was held between the parties on November 10, 2008 to discuss the need for radiation monitoring. Work was discontinued at that time until the need to perform radiation monitoring was determined. The USEPA verbally concurred that radiation monitoring did not need to be performed for this work scope, since the excavation was shallow and no soil would be

removed. ComEd, however, elected to perform radiation monitoring for the duration of the work as a precautionary measure. Work resumed with radiation monitoring on November 13, 2008. The duration of the work included the aforementioned vault repair and pavement replacement activities that occurred beyond the perimeter of the vault box, at which point radiation monitoring was performed. No soil was excavated during the removal of the concrete over the roof of the vault box.

November 13, 2008

Meade and Enginex personnel arrived on-site at approximately 0830, followed by SET and SAHCI personnel. A site walk-through and discussion of the projected activities took place between each of the contractors on-site. A health and safety meeting was conducted by SET, followed by SAHCI's radiation safety training session. Since no soil removal and worker contact was to occur, air monitoring for radiation exposure was not warranted and no personal dosimeters were issued for the work. Documentation of the radiation training is included in Appendix C with the SAHCI report.

Prior to the surface removal work, Diamond Coring, Inc. conducted the saw cutting of the concrete. Meade then used a backhoe to remove the concrete from the sidewalk and roadway along the western border of the vault box. Since the primary work being conducted at this time involved making modifications to the sidewalk and roadway, the excavation ceased once the concrete was removed and the subsurface soil was exposed (approximately 18 in bgs). Subsurface soil was not disturbed during these activities and no soil was removed. One roll-off box of concrete debris was generated for the day.

SAHCI screened the surface of the concrete for radiation prior to its removal. Once the concrete was removed, SAHCI then screened the exposed subsurface native soil for radiation. The subsurface soil was exposed at approximately 18 in bgs, which was the maximum depth of the removal. Since no soil was generated for disposal, soil samples were not collected for laboratory analysis. SET removed one roll-off box of concrete for off-site disposal.

Work activities ended for the day at approximately 1400. Prior to leaving the site, Meade personnel cleaned the work area and placed equipment inside the barricaded work zone.

November 14, 2008

The Meade work crew arrived on-site at approximately 0850 and began clearing the work zone of equipment. SET delivered an empty roll-off box prior to beginning work for the day.

At 0930, Meade began removing concrete from east to west along the southern side of the vault box in the far right lane of Ontario Street. The removal area was approximately 5 ft wide and 27 ft long from east to west. Subsurface soil was exposed at 18 in bgs. After completing the work in the roadway, Meade began removing a 15 ft long by 9 ft wide section of the sidewalk along the eastern edge of the vault box. Subsurface native soil was exposed beneath the sidewalk at approximately 6 in bgs.

No soil was removed during the site work. The removed concrete was placed into the lined roll-off box for off-site disposal. SET arrived on-site at approximately 1130 to deliver a second roll-off box and remove the full one. A total of two roll-off boxes of concrete were generated during the second day.

SAHCI screened the surface of the concrete in both areas for radiation prior to its removal. Once the concrete was removed, SAHCI then screened the exposed subsurface native soil for radiation. Since no soil was generated for disposal, soil samples were not collected for laboratory analysis.

Meade completed excavation work at approximately 1400 and confirmed that surface removal activities had been completed, so radiation monitoring was discontinued. Enginex and SAHCI personnel demobilized from the site at approximately 1430. SET remained on site until the second roll-off box was removed.

3.0 RADIATION FIELD SCREENING RESULTS

The field screening of radiation levels at the surface and beneath the pavement was performed by SAHCI using a Ludlum Model 2221 Scaler/Ratemeter with attached 2-inch by 2-inch NAI probe. The instrument was calibrated on October 22, 2008. The USEPA soil action level of 7.1 picocuries per gram (piC/g) total thorium for this instrument corresponds to 18,766 counts per minute (cpm).

Prior to beginning the radiation monitoring, background radiation levels were measured immediately above the pavement surface. Five random locations were selected for background readings in the area of the 400 East Ontario Street. The background readings were measured by collecting one-minute integrated counts at each of the selected locations. The background radiation levels ranged from 4,877 cpm and 9,255 cpm, and yielded an average level of 6,685 cpm. It should be noted that the background locations being above pavement likely yielded levels much lower than what would have been expected for urban soil and fill.

Soil gamma surface scans were performed approximately every 10 ft immediately above the surface of the concrete prior to its removal. Radiation count rates were then taken at approximately the same locations once the concrete was removed and the subsurface native soil was exposed (maximum of 18 in bgs). Radiation count rates ranged from 5,300 to 10,100 cpm over the entire removal area. None of the measured count rates for soil screened throughout the entire removal area exceeded the action level of 18,766 cpm. Consequently, the entire volume of the removed concrete was placed directly into roll-off boxes for off-site disposal. The three roll-off boxes containing the removed concrete were disposed of as non-regulated material at the Onyx Landfill in Zion, IL. A sketch of the removal area and sampling locations, as well as a detailed description of the soil screening activities, is presented in SAHCI's report included as Appendix C.

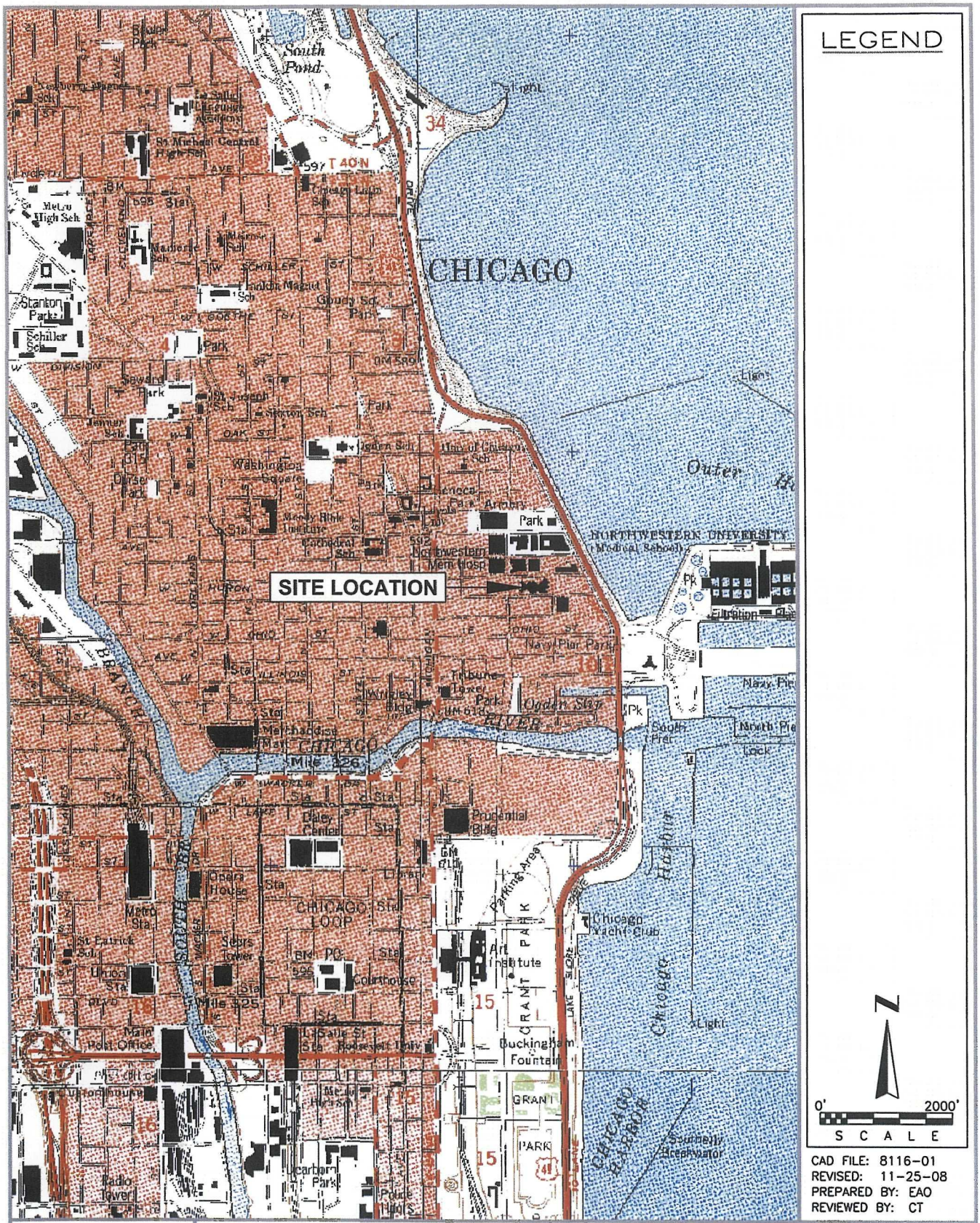
4.0 FINAL SUMMARY

Radiation monitoring was performed during site work performed on November 13 and 14, 2008. The work was being conducted as part of a repair to a ComEd vault box beneath the sidewalk at

that location. The work site is in the Streeterville area previously identified by the USEPA and the CDE as potentially contaminated with thorium. A portion of the work that included the exposure and repairs to the vault box had already been completed by Meade prior to the initiation of radiation monitoring on November 13, 2008. No soil was removed during the work activities, and the depth of the removal did not exceed 18 in bgs. Even though the USEPA verbally concurred that radiation monitoring did not need to be performed for this work scope, ComEd elected to perform radiation monitoring for the duration of the work as a precautionary measure. Procedures approved by the USEPA for soil radiation monitoring and soil disposal were followed.

The field screening of radiation levels during the excavation was performed by SAHCI. There were no count rates of subsurface soil throughout the excavation that approached the action level of 18,766 cpm. Since subsurface native soils were not disturbed, air monitoring was not performed during the removal work, and soil samples were not collected for laboratory analysis. The removed concrete was placed directly into roll-off boxes for off-site disposal. The three roll-off boxes containing the removed concrete were disposed of as non-regulated material at the Onyx Landfill in Zion, IL.

FIGURES



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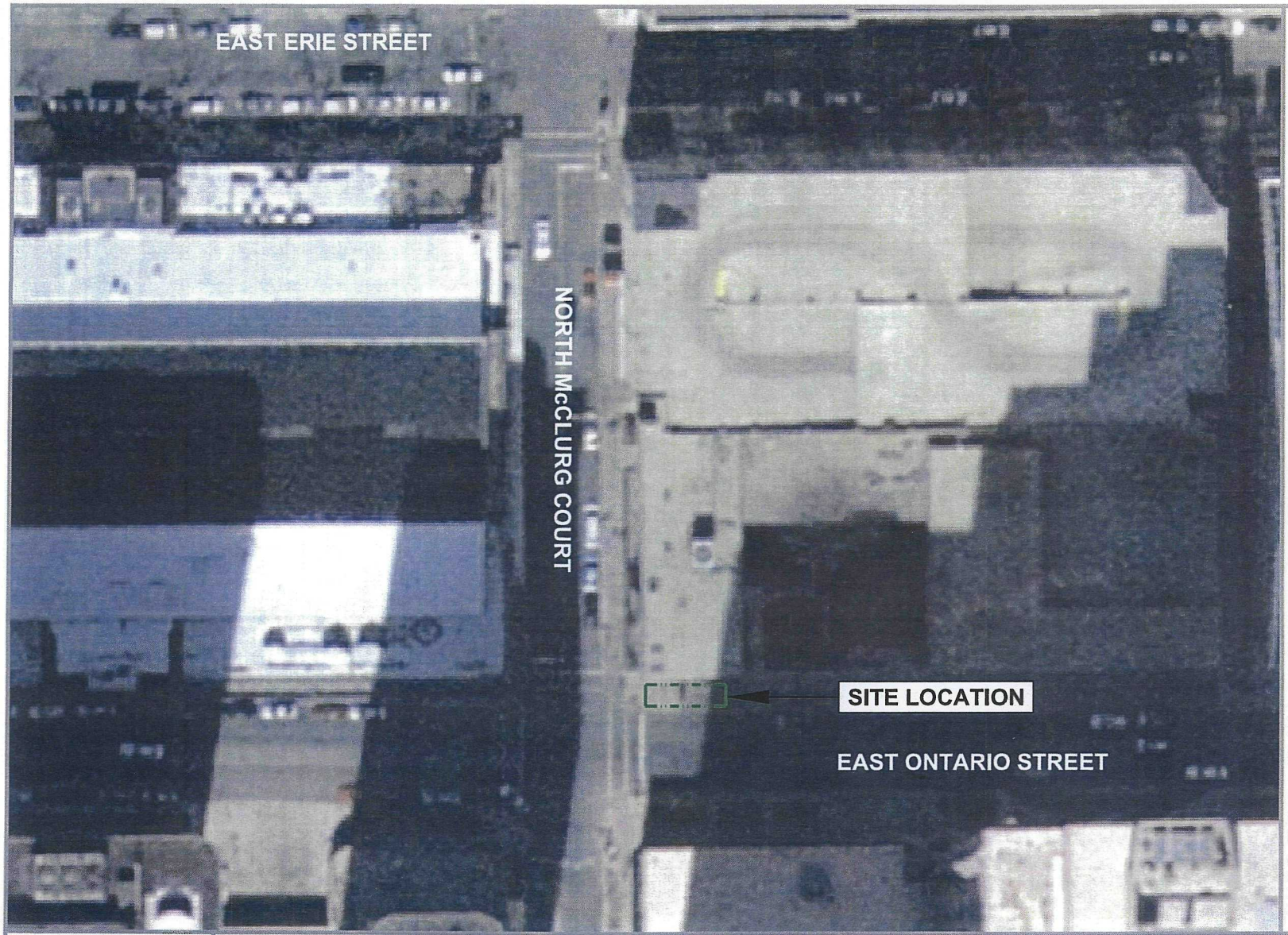
COMED -ONTARIO
400 EAST ONTARIO STREET
CHICAGO, ILLINOIS

FIGURE 1
SITE LOCATION MAP



LEGEND

APPROXIMATE SITE BOUNDARY

N

0' 60'

S C A L E

CAD FILE: 8116-02
REVISED: 11-25-08
PREPARED BY: EAO
REVIEWED BY: CT

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COMED - ONTARIO
400 EAST ONTARIO STREET
CHICAGO, ILLINOIS

FIGURE 2
AERIAL VIEW OF SITE
(2002 TERRASERVER)

SET Environmental, Inc

APPENDIX A
CITY OF CHICAGO PERMITS

Permit # 878987860

Received Date: Oct 15, 2008 11:4:33

COMMONWEALTH EDISON CO
227 WEST MONROE
STREET-9TH FLOOR
CHICAGO, IL 60606

JIM TORRES 312-394-3260

City of Chicago
Department of Transportation
(312) 744-4652

ACTIVITY HOURS

Start no earlier than 24 HOURS Stop no later than 24 HOURS - Operating Equip/PW - Maint (Sidewalk or Parkway)

DATES

Oct 15, 2008 through Nov 21, 2008

ACTIVITIES

Operating Equip/PW - Maint (Sidewalk or Parkway):

A REMOVE & INSTALL VAULT ROOF will be using 150 feet of Parkway for Maintenance.

The operating equipment will cause a Total Closure on the parkway or sidewalk.

400 - 410 E ONTARIO ST

WORK TO BE PERFORM BY MEADE

Barricade/Walkway - Maint (Sidewalk or Parkway):

Placement of a 150 foot barricade for Maintenance. The barricade will cause a Total Closure on the parkway or sidewalk.

MAINTENANCE WORK will be stored in the barricaded work site.

400 - 410 E ONTARIO ST

CLOSE SIDEWALK AND REDIRECT PEDESTRIANS TO OPPOISTE CURBLANE

5159344122

Barricade/Walkway - Maint (Sidewalk or Parkway):

JERSEY WALL CURBLANE FOR PEDESTRIANS TRAFFIC.

OK JMAC.

Restrictions:

1. A copy of the permit must remain on-site for inspector's review.
2. Permit fees must be paid within 24 hours of the date of issuance. Failure to pay will result in the immediate cancellation of the permit. Monthly billing accounts are not applicable.
3. Maintain a minimum of TOTAL CLOSURE TOpedestrian traffic.
4. Pedestrian walkway must be kept free of all obstructions and debris.
5. Adequate provisions must be made to prohibit the falling of any debris or materials and to provide overhead cover.
6. Sight clearance of all traffic signals and regulatory signs must be maintained at all times.
7. Maintain fire hydrant and manhole access.
8. Crosswalk obstruction prohibited.
9. Barricades and detour signs provided by permittee.
10. Must remain free of advertisements and graffiti.
11. No work in or use of the public right of way is to be done when a special event is taking place. It is up to the applicant to determine if an event is scheduled. To obtain a listing of programs or events within the City of Chicago please dial 311 when you are within the City boundaries.
12. It is the responsibility of the applicant to fund Traffic Control Aides if the City deems it necessary due to heavy congestion situations.
13. Maintain vehicular traffic at all times.
14. Cranes must be operated by a licensed crane operator.
15. It is the responsibility of the contractor to verify that the weight of the crane and the units to be lifted onto the building or structure can be structurally supported on the public way.
16. Outriggers cannot be placed on the sidewalk.

Permit # 878987860

Received Date: Oct 15, 2008 11:4:33

COMMONWEALTH EDISON CO
227 WEST MONROE
STREET-9TH FLOOR
CHICAGO, IL 60606

City of Chicago
Department of Transportation
(312) 744-4652

JIM TORRES 312-394-3260

ACTIVITY HOURS

Permitted activity hours begin at 24 HOURS AROUND THE CLOCK Permitted activity hours will end at NA. ANY WORK ON ARTERIAL STREETS MUST ADHERE TO ALL RUSH HOUR RESTRICTIONS. 400 - 400 E ONTARIO ST Street Opening (Curb Lane, Parkway, Sidewalk)

DATES

Oct 15, 2008 through Nov 21, 2008

ACTIVITIES

Street Opening (Curb Lane, Parkway, Sidewalk): **Dig #: TBD**

There will be 1 opening(s) in the public way for the purpose: REPLACE COMED VAULT ROOF.

45 Feet x 21 Feet

Excavation may commence on - NO SOONER.

400 E ONTARIO ST

ENVRIONMENTAL SIGN OFF FROM RAHMAT BEGUM ON OCTOBER 17TH, 2008

OK JMAC.

OUC 2008-386-82

5159344122

Street Opening (Curb Lane, Parkway, Sidewalk): **Dig #: TBD**

WORK TO BE PERFORM BY MEADE,

Parking Restriction Posting/Meter Bagging: **Dig #: TBD**

A Parking Restriction Sign Posting between OCT 22, 2008 and NOV 4, 2008 is required for REPLACEMENT OF COMED VAULT ROOF. The posting is on the North side of the street and will is be effective from 6:00 AM and to 6:00 AM.

Special Instructions are 24 HOUR POSTING.

The corresponding Service Request number is 08-02111114.

400 - 400 E ONTARIO ST

Restrictions:

1. All signs must be removed by the contractor when job is complete.
2. Applicant must contact Construction Compliance for any changes that affect the date(s), time(s) or location(s) for Meter Bagging and/or Parking Restriction Sign Posting.
3. Any questions regarding the actual placement of signs or meter bagging, contact the Bureau of Traffic Services at (312) 747-5085.
4. A copy of the permit must remain on-site for inspector's review.
5. Permit fees must be paid within 24 hours of the date of issuance. Failure to pay will result in the immediate cancellation of the permit. Monthly billing accounts are not applicable.
6. All directional boring must be pre-approved by the Office of Underground Coordination.
7. Contractor must secure plating over all openings in the roadway during non-working hours until such time when the road surface is restored.
8. All traffic control will be the responsibility of the contractor and must comply with all MUTCD standards.
9. Permitted Hours: 24HOURS AROUND THE CANOPY
10. Restore all lanes to normal operation during non-working hours.
11. Must use flagmen and/or arrow boards to maintain traffic operations through the work zone.
12. Contractor must notify DIGGER at 312-744-7000 no less then 48 hours (exclusive of Saturdays, Sundays and Holidays) but no more then 14 calendar days in advance of the start of the excavation or demolition, unless the excavation date was provided with the application and remains unchanged. Prior to 26 calendar days the Contaractor must notify DIGGER to renewal the dig date!
13. It is the Excavator's responsibility to request refreshing of marks when needed, but no longer

5159344122

Restrictions:

than 28 calendar days after the last requested date.

14. When applicable, all excavation areas are to be clearly marked in safety white paint prior to calling DIGGER. White paint is not required for joint meets or emergency work.
15. Excavators requesting dig tickets are responsible for the protection of utility markings at the job site. Any markings of underground utilities utilizing utility colors, must be done by facility owners or authorized agents only.
16. Permittee must provide a sign which identifies the telephone number and company or person performing the work. Signage may be affixed to barricades.
17. Permanent base pavement restoration to follow within 5 days after the completion of underground work.
18. All pavements are to be restored in accordance with CDOT Construction Standards.
19. All street openings must be restored with concrete base to grade.
20. Work to be performed as per plans and specifications.
21. Use of pneumatic equipment must not begin before 8:00 A.M. or continue after 8:00 P.M.
22. Maintain pedestrian and vehicular traffic at all times.
23. Pavement opening to be backfilled to grade or plated during off work hours.
24. Parkway excavation by hand, cut and replace sod wherever possible.
25. Permittee to provide all barricades, signs and/or flagmen as necessary.
26. Sidewalk pavement broken by hand or with pneumatic hammer only.
27. WARNING: THIS WORKSITE(S) CONTAINS NON-PETROLEUM MATERIAL. ANY QUESTIONS PERTAINING TO HANDLING OF MATERIALS, CONTACT THE DEPT. OF ENVIRONMENT AT 312-744-3152.
28. No work in or use of the public right of way is to be done when a special event is taking place. It is up to the applicant to determine if an event is scheduled. To obtain a listing of programs or events within the City of Chicago please dial 311 when you are within the City boundaries.
29. It is the responsibility of the applicant to fund Traffic Control Aides if the City deems it necessary due to heavy congestion situations.

Affected CUAN Sites: 7, 15, 21, 22, 24, 29, 34, 36, 38, 53, 65, 141, 147

EFFECTIVE DATES OF PERMIT

Current: Oct 15, 2008 through Nov 21, 2008 (Input date: Oct 15, 2008 11:04:33 a.m.)

END OF PERMIT

APPENDIX B
GENERAL PROCEDURES FOR THORIUM MONITORING

SET Environmental, Inc.
450 Sumac Road
Wheeling, IL 60090
Phone: 847/537-9221 Fax: 847/537-9265

In partnership with:
ENGINEX
ENVIRONMENTAL ENGINEERING

400 East Ontario, Chicago, IL
General Procedure for Thorium Monitoring

PRIOR TO WORK COMMENCING

- A permit will be obtained from City of Chicago Department of the Environment. - ComEd
- The "General Procedure" will be forwarded to the USEPA for approval prior to commencing work. - Enginex
- USEPA will be contacted 48 hours prior to performing a walkover survey so that they may be present. - Enginex
- Permission will be obtained prior to beginning site work from the corresponding property owner(s) for which the electrical tie-in is being performed for the temporary storage of secured roll-off box(es) of thorium-contaminated soil that may be generated and require alternative disposal arrangements. - SET
- Site work and initial site conditions will be documented. - Enginex
  - Photographs of entire site before breaking ground will be taken.
  - For purposes of generating a site figure, an aerial photograph is not necessary. A map with measurements from a fixed feature (e.g., a curb) would suffice.
  - A walk-over survey will be conducted in the work location (site) and background gamma readings recorded. Background is considered to be 2.1 picoCuries per gram (pCi/g) as established for the Lindsay Light II sites.
- Sanitary facilities will be provided. - SET
  - Portable chemical toilets will be supplied.
  - Adequate washing areas will be provided.
- SET will review USEPA HASP and General Procedure.
- Enginex will review USEPA HASP and General Procedure.

WORK SCOPE

- Health and safety meeting (e.g., tail-gate meeting) will be conducted before starting site work each day.
  - Potential exposure to thorium-impacted soil and what types of testing will be performed will be reviewed. - Enginex, page ii & 3, 6
  - Contents of the USEPA HASP will be discussed and general health and safety concerns covered (i.e. PPE, traffic, heavy equipment). – SET & Meade, pages 1-47
  - Clean/support, decontamination, and exclusion zones will be established if needed in the event the field screening readings are above the action level of 7.1 piC/g. - SET, page 4
  - A first-aid station will be set up. - SET, page 11

- The location of phone numbers and procedures for contacting ambulance services, fire dept, police and medical facilities will be identified. - SET, page 11
- The location of maps and routes to the closest medical facilities will be identified. - SET, page 11
- The location of sanitary facilities will be identified. - SET, page 34
- Personal and ambient air monitoring equipment will be administered for use. - Enginex, page 24

➢ Document readings and samples:
- Personal Monitoring: Records of all radiation exposures incurred by field personnel will be maintained. - Enginex, page 10, 24-28
- Surface Soil Scan Procedure: The excavation shall be screened for radiation count rates using a Ludlum Model 2221 Scaler / Ratemeter with attached 2"x 2" NaI probe. The instrument shall be calibrated for thorium with an established count rate threshold that correlates to the USEPA action level of 7.1 piC/g. The trench shall be excavated in lifts not to exceed 18 inches in depth.
  - After each lift, the trench shall be surveyed for total radiation count rate and the maximum level recorded. Down to an excavation depth of 41/2 feet below ground surface (i.e., before OSHA regulations require use of trench shoring or benching), the trench can be entered to survey both the walls and floor. Beyond an excavation depth of 41/2 feet below ground surface, the trench floor shall be surveyed using the "Excavator Bucket Survey" procedure described below for each 18-inch lift upon removal from the trench. At this point, it will no longer be feasible to survey the trench walls, since they will be mostly covered by the shoring. A six-inch detector shield may be utilized if deemed necessary to obtain accurate survey results. - Enginex
- Excavator Bucket Survey Procedure: After excavated soil is removed from the trench, the surface of the soil shall be surveyed for total radiation count rate within the excavator bucket before it is emptied. If the radiation count rates are at background levels at the soil surface in the excavator bucket, the soil spoils can be loaded directly into the clean soil roll-off box. If any count rates are noted above background levels but below the action level of 7.1 pCi/g, the bucket spoils shall be emptied on a known surface or plastic sheeting and resurveyed. If the follow-up survey shows no count rates greater than the action level of 7.1 pCi/g, the soil spoils can be then be loaded into the clean soil roll-off box. - Enginex
- Thorium-Contaminated Soils Procedure: If any excavated soils are found during either surface scanning or bucket surveys with a count rate greater than the 7.1 pCi/g action level, then those soils shall be isolated, placed in supersacks, and stored in a locked roll-off box pending further sampling for laboratory analysis and disposal evaluation. The area of thorium-contaminated soils above the action level shall then be roped off and isolated as an exclusion zone. A sample of the material with the highest radiation count rate (whether excavated or in the trench) will be collected as a discrete sample and sent for laboratory analysis for confirmation purposes (if requested, this sample will also be provided to the USEPA). The trench location from which any material exceeding the action level is identified will be documented. Proper PPE, including Tyvek suits, rubber boots, and latex gloves will be worn by any personnel entering an exclusion

zone. Additionally, high volume air sampling will be implemented prior to moving or loading thorium-contaminated soil. All personnel and equipment leaving an exclusion zone shall be monitored for removable contamination. - Enginex

- Soil removal and sampling:
  - Soil removed from the excavation shall be stored in covered roll-off boxes off-site pending results of laboratory analysis. Three 20-milliliter (ml) composite samples shall be collected from each roll-off box. Each composite sample shall consist of soil gathered from a minimum of four separate sampling locations. The composite soil sample shall be screened to remove solids greater than ¼-inch, homogenized, and placed into the sample vial. Soil samples shall be sent for laboratory analysis after each work day. The analytical results will be submitted to the USEPA in electronic format for review prior to final soil disposition. - Enginex
  - ComEd will adhere to the following soil disposal protocol unless the USEPA requests a variation to the protocol either prior to the beginning of the trench excavation or within one week of receipt of the analytical results for review (e.g., USEPA requests roll-off boxes be held pending receipt of confirmatory analytical results for samples sent to USEPA laboratory). If the laboratory analytical results show a result less than the 7.1 pCi/g action level for each of the three composite samples collected from the individual roll-off boxes, the corresponding roll-off boxes will be disposed of as clean fill. If the laboratory analytical results are at or above the action level of 7.1 pCi/g for at least one of the three composite samples collected from the individual roll-off boxes, the corresponding roll-off boxes will be held pending the results of further evaluation and feedback from the USEPA, which may include further sampling and testing of the roll-off box(es) in question or receipt of results from the USEPA confirmation soil samples. Alternative soil disposal methods or additional sampling, subject to USEPA approval, will be implemented for any soils with a concentration exceeding the 7.1 pCi/g action level. - Enginex
  - ComEd must provide information on final material disposition locations for soil disposed of as clean fill. - SET
  - The USEPA should contact Enginex to make arrangements for the analysis of confirmation soil samples before or immediately following the completion of site work. The USEPA should provide a written request or Email identifying the specific samples it has selected for confirmatory analysis and the laboratory to where they should be forwarded. - USEPA
- Minimize potential public contact:
  - Public access to excavated soil will be restricted using barricades, temporary fencing, and jersey barriers. - Meade & SET, page ii
  - Excavated soil piles will be covered if needed to minimize fugitive dust. - Meade & SET, page ii
  - Off-site tracking by vehicles and potentially contaminated boots or clothing by workers will be controlled. - Meade & SET, page ii
- Photographs of area once work is completed will be taken. - Enginex
- A final report that contains the results of the radiation monitoring and/or surveying will be completed. - Enginex

- *The final written report will be submitted to the following agencies: (page ii). - SET*
  - USEPA
  - IL Department of Energy
  - Illinois Department of Nuclear Safety: Phone No. 217-785-0600
  - Chicago Department of the Environment: Phone No. 312-744-7672
  - IEMA (Illinois Emergency Management Agency): Phone No. 217-782-7860

SET Environmental, Inc

APPENDIX C
SAHCI THORIUM MONITORING REPORT

Stan A. Huber Consultants, Inc.
Health Physics and Radiation Safety Services

200 North Cedar Road – New Lenox, Illinois 60451-1751 – (800) 383-0468 or (815) 485-6161 – FAX (815) 485-4433 – Email sahci@sahci.com – Home Page www.sahci.com

November 18, 2008

Meredith Cywinski
General Manager
Enginex Environmental Engineering
28734 North Irma Lee Circle
Lake Forest, Illinois 60045

RE: 400 East Ontario St. – ComEd Thorium Monitoring

Dear Ms. Cywinski:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during excavation around a newly installed ComEd vault at 400 E. Ontario St. in Chicago, Illinois. The monitoring was performed on November 13 and November 14, 2008. All activities were conducted under the guidance of document *400 East Ontario General Procedure for Thorium Monitoring.*

Radiation Safety Training

On November 13, 2008 Glenn Huber performed a radiation safety training session for the contractors working on the project. The training was approximately fifteen minutes in duration. The training outline and attendance sheet can be found in Attachment 1.

Instrumentation

Surface gamma scans were performed by Glenn Huber using a Ludlum Model 2221 Scaler / Ratemeter with attached 2"x2" NaI probe. The instrument was calibrated on October 22, 2008. The USEPA action level of 7.1 picocuries per gram (pCi/g) total thorium for this instrument is 18,766 counts per minute (cpm).

Background was determined for this site by selecting 5 random locations on Columbus Drive and collecting one-minute integrated counts at each location. The following count rates were collected:

Location 1	9027 cpm – on parkway soil
Location 2	9255 cpm – on parkway soil
Location 3	5317 cpm – on sidewalk
Location 4	4877 cpm – on sidewalk
Location 5	4951 cpm – on street asphalt
	6685 cpm = average background count rate

Soil Gamma Scans

Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeter described above. The maximum excavation depth was 18 inches, so data was collected at the surface prior to excavation and after the asphalt and/or concrete was removed. No soil was excavated during the project.

The maximum gamma count rate for each section and lift was recorded on the Radiation Survey Form found in Attachment 2.

The count rates during sidewalk and street surface removal ranged from 5400 cpm to 10,100 cpm. No count rates were found at any time that exceeded the threshold limit of 18,766 cpm.

Soil Sample Analysis

There were no soil samples obtained during the project

Air Monitoring

There was no air monitoring performed during the project, since no subsurface soils were disturbed.

Personal Dosimetry

Personal Dosimeters were not issued for this project.

Thank you for your assistance with this project. If you have any questions or need additional information please call me at (815) 485-6161.

Sincerely,
Stan A. Huber Consultants, Inc.

Glenn Huber, CHP
President

Attachment 1

Training Documentation

400 E. Ontario St. – ComEd Excavation

Radiation Safety Training –400 E. Ontario

1. Basic Radiation Physics
    a. What is ionizing radiation?
    b. Types of radiation
        i. Alpha
        ii. Beta
        iii. Gamma
        iv. Neutron
        v. X-rays
2. ALARA
    a. Time
    b. Distance
    c. Shielding
3. Exposure vs. Contamination
4. Radiation Units and Quantities
    a. Radioactivity
    b. Exposure
5. Sources of Radiation
    a. Man-made
    b. Background
6. Radiation Biology / Health Effects
    a. Whole body vs. Localized
    b. External vs. Internal
    c. Acute vs. Chronic
    d. Internal Pathways
7. Personnel Monitoring
    a. Instrumentation
    b. Frisking
    c. Dose Limits
8. Air and Soil Monitoring
    a. Lift and Bucket Survey Procedure
    b. Personal Air Monitors
9. Working Safely Around Contaminated Soil

Radiation Safety Training 400 E. Ontario

Name (Print)	Signature	company
Randy Thompson	Randy Thompson	CoM
George Malacha		C of M
Josh Swierenga		SET
Carri Townsend	Carri Townsend	Engineering
Emerald M Brown	Emerald M Brown	COM
Ron DeBerry		COM

Attachment 2

Radiation Survey Form
Surface Gamma Scans

400 E. Ontario St. – ComEd Excavation

sahci
Stan A. Huber Consultants, Inc.

Radiation Survey Form

Location/ Project ID: 400 E. Ontario St. - Enginex / ComEd Excavation

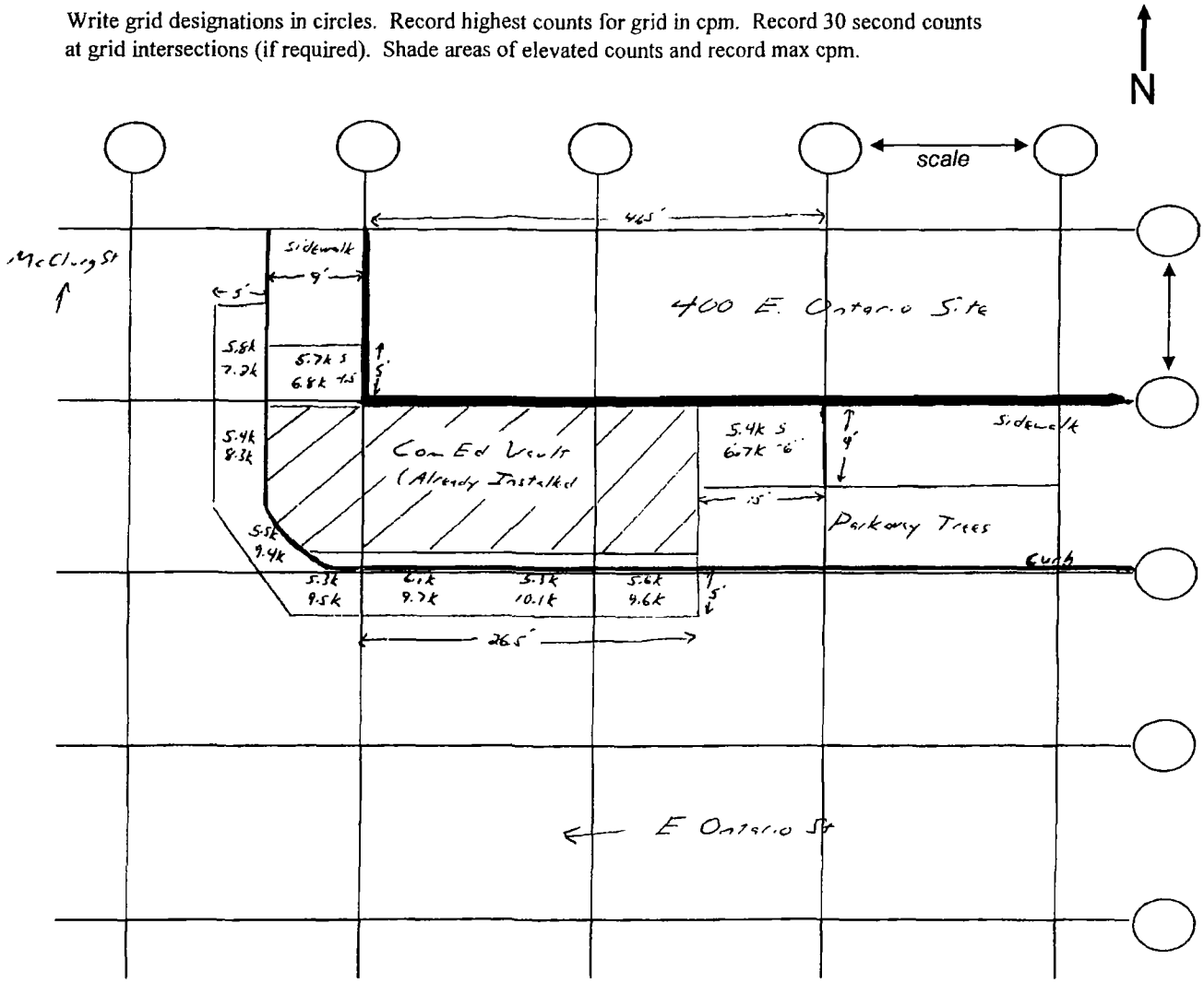
Date: 11/13/08 & 11/14/08 **Technician:** Glenn Huber

Inst Model: Ludlum 2221 **Serial No. :** 134542

Probe Type: 1"x1" NaI Shielded / 2"x2" NaI Not Shielded **Lift Elevation:** surface → -1.5'

Background 6685 **cpm** **Action Level:** 18,766 **cpm**

Write grid designations in circles. Record highest counts for grid in cpm. Record 30 second counts at grid intersections (if required). Shade areas of elevated counts and record max cpm.



Note: Top number = surface reading kcpm
Bottom number = -1.5' reading (unless otherwise noted) kcpm

SET Environmental, Inc

APPENDIX D
SITE PHOTOGRAPHIC LOG

ENGINEX
ENVIRONMENTAL ENGINEERING

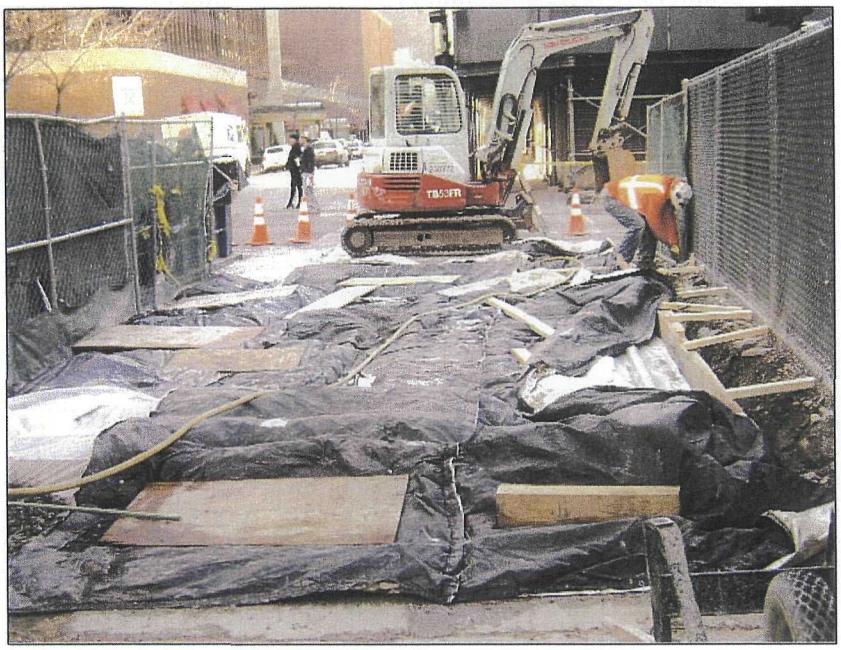


Photo 1: Looking east to west. Vault box area after surface removal was completed. The vault box was exposed prior to thorium monitoring being initiated.

Photo 2: Looking east to west. Beginning of pavement removal at corner of Ontario and McClurg Streets.

Photo 3: Looking east to west. Work area along Ontario Street prior to the beginning of the surface removal.

Photo 4: Looking north to south. Beginning of pavement removal using a backhoe along Ontario Street.

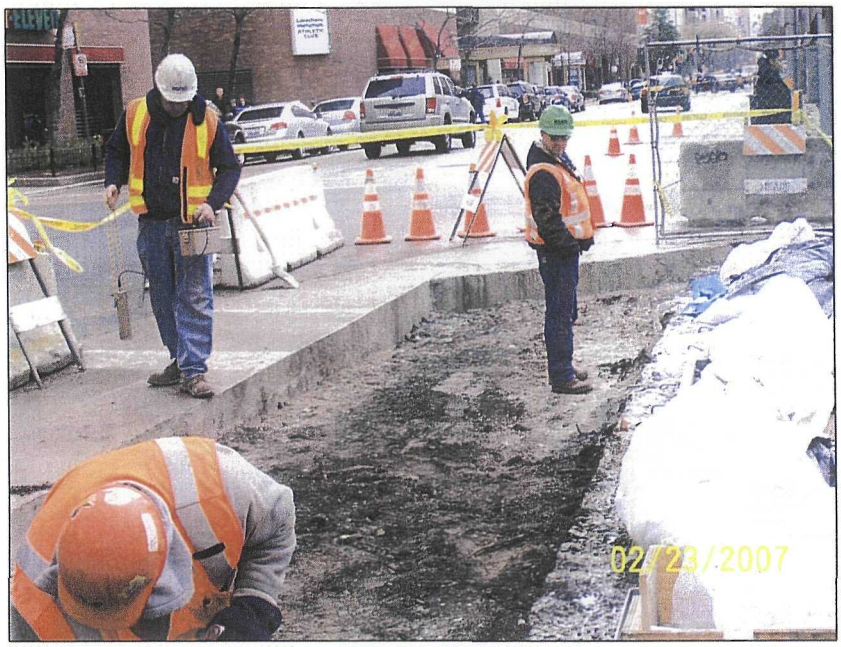


Photo 5: Looking east to west. Radiation field screening by SAHCI during pavement removal along Ontario Street.

Photo 6: Looking east to west. Work area at completion of the surface removal.